

Appl. No. 10/598,844  
Amdt. Dated: March 23, 2009  
Reply to Office action of December 18, 2008

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### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims

**Claim 1 (Currently amended):** An electromechanical signal selection device comprising:

a micro-vibrator which can be excited by an input signal;  
and

a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
in accordance with a crystal structural change of the micro-  
vibrator when excited so as to select a signal.

**Claim 2 (Cancelled):**

**Claim 3 (Previously presented):** The electromechanical signal selection device according to claim 1, wherein the physical property is an electric conduction characteristic.

**Claim 4 (Currently amended):** The electromechanical signal selection device according to claim 1, An electromechanical signal selection device comprising:

a micro-vibrator which can be excited by an input signal;  
and

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a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal, and

wherein the micro-vibrator is retained by an electrode placed on the post.

**Claim 5 (Original):** The electromechanical signal selection device according to claim 4, wherein a bonded surface between the electrode and the micro-vibrator is located at a distance from the post.

**Claim 6 (Original):** The electromechanical signal selection device according to claim 1, wherein the post comprises a structure having lower rigidity than that of the micro-vibrator.

**Claim 7 (Original):** The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a multilayer structure of at least two layers including a material layer generating the change in physical property and a conductor layer.

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**Claim 8 (Currently amended):** ~~The electromechanical signal selection device according to claim 7, An electromechanical signal selection device comprising:~~

a micro-vibrator which can be excited by an input signal;  
and

a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal,

wherein the micro-vibrator comprises a multilayer structure  
of at least two layers including a material layer generating the  
change in physical property and a conductor layer,

wherein the conductor is formed to be linear, and

wherein the material layer generating the change in  
physical property is formed around the linear conductor layer.

**Claim 9 (Original):** The electromechanical signal selection device according to claim 7, wherein the material layer generating the change in physical property is formed on the side where an electric field of a signal is concentrated.

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**Claim 10 (Currently amended):** The electromechanical signal selection device according to claim 9, An electromechanical signal selection device comprising:

a micro-vibrator which can be excited by an input signal;  
and

a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal,

wherein the micro-vibrator comprises a multilayer structure  
of at least two layers including a material layer generating the  
change in physical property and a conductor layer,

wherein the material layer generating the change in  
physical property is formed on the side where an electric field  
of a signal is concentrated, and

wherein the material layer generating the change in  
physical property is formed under the substrate side of the  
conductor layer.

**Claim 11 (Currently amended):** The electromechanical signal selection device according to claim 7, An electromechanical signal selection device comprising:

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a micro-vibrator which can be excited by an input signal;  
and  
a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal,  
wherein the micro-vibrator comprises a multilayer structure  
of at least two layers including a material layer generating the  
change in physical property and a conductor layer, and  
wherein half the radius of the conductor is not larger than  
skin depth of a high frequency signal.

**Claim 12 (Original):** The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises perovskite type transition metal oxide.

**Claim 13 (Original):** The electromechanical signal selection device according to claim 12, wherein the perovskite type transition metal oxide is  $\text{PrNiO}_3$  showing metal-insulator transition.

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**Claim 14 (Original):** The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a piezoresistive effect material.

**Claim 15 (Original):** The electromechanical signal selection device according to claim 14, wherein the micro-vibrator comprises at least one of Si,  $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$  and  $\text{BaTiO}_3$ .

**Claim 16 (Original):** The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a superconductor.

**Claim 17 (Original):** The electromechanical signal selection device according to claim 16, wherein the superconductor is one of Al, Pb,  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$  and  $(\text{BEDTTTF})_2\text{I}_3$ .

**Claim 18 (Original):** The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises a carbon-based material.

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**Claim 19 (Original):** The electromechanical signal selection device according to claim 1, wherein the input signal is supplied through an electrode provided in the micro-vibrator.

**Claim 20 (Currently amended):** ~~The electromechanical signal selection device according to claim 1, An electromechanical signal selection device comprising:~~

a micro-vibrator which can be excited by an input signal;  
and

a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal, and

wherein the input signal is supplied through a driving electrode disposed adjacently to the micro-vibrator.

**Claim 21 (Previously presented):** The electromechanical signal selection device according to claim 20, wherein an external force to be applied to the driving electrode is an electrostatic force.

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**Claim 22 (Currently amended):** ~~The electromechanical signal selection device according to claim 1, An electromechanical signal selection device comprising:~~

a micro-vibrator which can be excited by an input signal;  
and

a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal, and

wherein a mechanism for applying an external magnetic field to the micro-vibrator is provided to excite the micro-vibrator due to a Lorentz force.

**Claim 23 (Currently amended):** ~~The electromechanical signal selection device according to claim 1, An electromechanical signal selection device comprising:~~

a micro-vibrator which can be excited by an input signal;  
and

a post for retaining the micro-vibrator,  
wherein the physical property of the micro-vibrator changes  
when excited so as to select a signal, and

wherein a mechanism for applying an external magnetic field is provided in a driving electrode or a signal input electrode

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disposed adjacently to the micro-vibrator so as to excite vibration of the micro-vibrator in a desired direction.

**Claim 24 (Original):** The electromechanical signal selection device according to claim 1, wherein the change in physical property is caused by piezoelectric effect.

**Claim 25 (Original):** The electromechanical signal selection device according to claim 24, wherein the micro-vibrator is designed to generate a signal by virtue of the piezoelectric effect when the micro-vibrator is excited to produce a structural change.

**Claim 26 (Original):** The electromechanical signal selection device according to claim 1, wherein the micro-vibrator comprises ceramics.

**Claim 27 (Original):** The electromechanical signal selection device according to claim 26, wherein the micro-vibrator comprises PZT.